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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/624,536	07/24/2000	Vladimir Oudaltsov	15675.P325	5311

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EXAMINER

LANIER, BENJAMIN E

ART UNIT	PAPER NUMBER
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2132

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/624,536

Applicant(s)

LOUDALTSOV ET AL.

Examiner

Benjamin E Lanier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed 15 February 2005 amends claims 1-10. Applicant's amendment has been fully considered and is entered.

Response to Arguments

2. Applicant's arguments filed 15 February 2005 have been fully considered but they are not persuasive. Applicant's argument that Kim does not disclose a feedback loop comprising means for generating time delay is not persuasive because Kim discloses that the chaos signal is time delay phase shifted after synchronization with the feedback loops (Col. 9, lines 19-34).
3. Applicant's argument that Kim does not disclose or suggest to filter the noise signal providing for synchronization is not persuasive because Kim discloses that the noise signal is filtered to have an adequate frequency band (Col. 6, lines 56-58).
4. Applicant's argument that the claimed injection of an information signal into a chaotic signal is different from Kim's adding an information signal to a chaotic signal is not persuasive because Applicant has not provided any information that would distinguish one from the other. One of ordinary skill in the art would interpret adding and injecting as the same process.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 1-4, 6, 8, 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim, U.S. Patent No. 6,049,614. Referring to claims 1, 6, 8, 9, Kim discloses a chaotic communication system wherein a transmitter comprises a chaotic signal that is used to mask a signal to be transmitted by modulating at least one variable of the master part by the external signal with chaotic characteristics and for feedbacking the at least one variable modulated of the master part by the external signal with chaotic characteristic to the master part (Col. 3, lines 12-40), which meets the limitation of a sender device, means for generating chaotic signals comprising a source producing chaotic signal and provided with a feedback loop, a mixer circuit element to inject an information signal to encrypt the information signal, received on one input, into the chaotic signal propagating in the feedback loop, received on another input. The chaos signal is time delay phase shifted after synchronization with the feedback loops (Col. 9, lines 19-34), which meets the limitation of generating time delay. The system is non-linear (Col. 1, lines 27-32), which meets the limitation of a non-linear circuit element. The signal is also filtered to have an adequate frequency band (Col. 6, lines 56-58), which meets the limitation of filter forming to limit the spectrum of the encrypted signal.

Referring to claim 2, Kim discloses that the external noise signal or chaotic signal is applied to each of the first synchronizing part and the second synchronizing part and the applied external noise signal or chaotic signal is scaled by a scaling factor (Col. 6, lines 56-64), which meets the limitation of filter forming disposed in the feedback loop presenting a transfer function which distributes the chaotic signal statistically over a given spectral profile.

Referring to claims 3, 4, Kim discloses that the signal is filtered to have an adequate frequency band (Col. 6, lines 56-68), which meets the limitation of filter forming disposed in the feedback loop comprising a bandpass filter.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim, U.S. Patent No. 6,049,614, in view of DeFries, U.S. Patent No. 5,729,607. Referring to claim 10, Kim discloses a chaotic communication system wherein a transmitter comprises a chaotic signal that is used to mask a signal to be transmitted by modulating at least one variable of the master part by the external signal with chaotic characteristics and for feedbacking the at least one variable modulated of the master part by the external signal with chaotic characteristic to the master part (Col. 3, lines 12-40), which meets the limitation of a sender device, means for generating chaotic signals comprising a source producing chaotic signal and provided with a feedback loop, a mixer

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circuit element to inject an information signal to encrypt the information signal, received on one input, into the chaotic signal propagating in the feedback loop, received on another input. The chaos signal is time delay phase shifted after synchronization with the feedback loops (Col. 9, lines 19-34), which meets the limitation of generating time delay. The system is non-linear (Col. 1, lines 27-32), which meets the limitation of a non-linear circuit element. The signal is also filtered to have an adequate frequency band (Col. 6, lines 56-58), which meets the limitation of filter forming to limit the spectrum of the encrypted signal. Kim discloses that the communication system can use analog or digital signals (Col. 13, lines 29-37) but Kim does not disclose an analog to digital converting means. DeFries discloses a non-linear communication system that utilizes a digital to analog converter (Col. 14, lines 43-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an analog to digital converter in the chaotic communication system of Kim in order to allow the system to support any compression/encoding format in a modular fashion as taught in DeFries (Col. 14, lines 41-43).

10. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim, U.S. Patent No. 6,049,614, in view of Pecora, U.S. Patent No. 5,379,346. Referring to claims 5 and 7, Kim discloses a chaotic communication system wherein a transmitter comprises a chaotic signal that is used to mask a signal to be transmitted by modulating at least one variable of the master part by the external signal with chaotic characteristics and for feedbacking the at least one variable modulated of the master part by the external signal with chaotic characteristic to the master part (Col. 3, lines 12-40), which meets the limitation of a sender device, means for generating chaotic signals comprising a source producing chaotic signal and provided with a

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feedback loop, a mixer circuit element to inject an information signal to encrypt the information signal, received on one input, into the chaotic signal propagating in the feedback loop, received on another input. The chaos signal is time delay phase shifted after synchronization with the feedback loops (Col. 9, lines 19-34), which meets the limitation of generating time delay. The system is non-linear (Col. 1, lines 27-32), which meets the limitation of a non-linear circuit element. The signal is also filtered to have an adequate frequency band (Col. 6, lines 56-58), which meets the limitation of filter forming to limit the spectrum of the encrypted signal. Kim does not disclose that the receiver and transmitter use cascaded devices. Pecora discloses a chaotic encrypted communication system that utilizes cascaded transmitters and receivers (Col. 1, line 49 – Col. 2, line 16). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use cascaded transmitters and receivers in Kim in order to remove the need for transmitting different drive and synchronized signals by cascade connecting subsystems of the chaotic system as taught in Pecora (Col. 2, lines 28-32).

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin E Lanier whose telephone number is 571-272-3805.

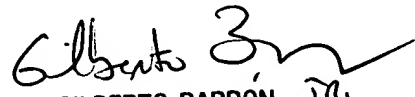
The examiner can normally be reached on M-Th 7:30am-5:00pm, F 7:30am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Benjamin E. Lanier



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